

## CHAPTER 18

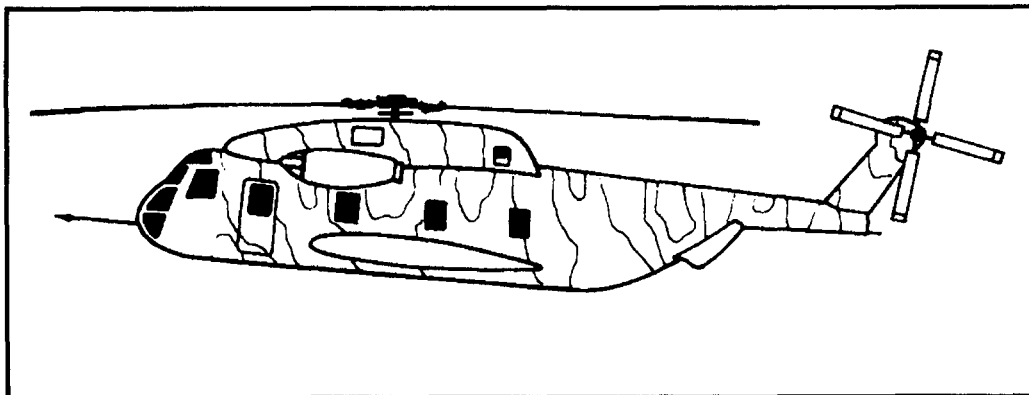
# OTHER SERVICE AIRCRAFT

*Other service rotary-wing aircraft can be used for parachuting operations. In addition to the procedures described here, Chapter 17, Section I, also applies.*

### Section I

#### CH-53 SEA STALLION (USMC)

The CH-53 is a twin-engine, single-rotor, medium-transport helicopter. Twenty combat-equipped parachutists, using the ramp, can jump from this aircraft (Figure 18-1).



**Figure 18-1. CH-53 Sea Stallion (USMC).**

#### 18-1. PREPARATION AND INSPECTION

The jumpmaster prepares and inspects the CH-53 as follows:

- a. **Preparation.** The following procedures prepare the CH-53 for jumping:
  - (1) Install the anchor line cable on the port side of the floor using the tie-down fittings at station number 182 as the forward attachment point, and station number 522 as the rear attachment point (Figure 18-2, page 18-2).
  - (2) Use one ¼-inch or 3/8-inch steel cable, 30 feet 4 inches in length, with four clamps, lock washers, and bolts.

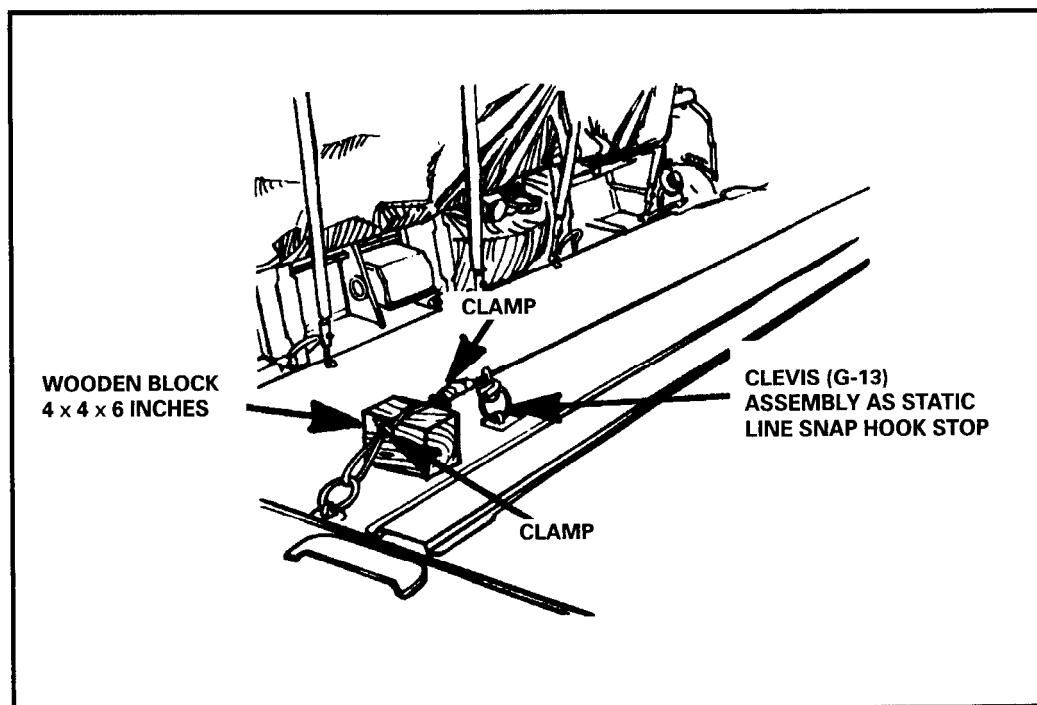


Figure 18-2. CH-53 anchor line installation.

(3) Place two 4-by 4-by 6-inch wooden blocks between the anchor line cable and floor and attach a clevis assembly (G-13) to the tie-down ring at station number 502 for use as a static line snap hook stop.

(4) Remove excess slack from the anchor line.

(5) Turn over and secure the conveyor rollers in the down position with the smooth surface up.

(6) Ensure parachute is equipped with a 5-foot static line extension (NSN 1670-00-368-4225).

b. **Inspection.** Before enplaning, the JM and pilot, or pilot's representative, jointly inspect the aircraft to determine the following:

(1) Safety belts are installed for all parachutists and extended all the way out to ensure positive hookup while seated.

(2) Seats are fastened securely in the down position.

(3) Seats are lifted and secured before jumping.

(4) The anchor line cable is not worn or frayed and is secured to the attachment points in the prescribed manner.

(5) The ramp and deck are clean and free of oil and water.

(6) All protruding objects near the ramp are removed or taped.

(7) The crew chief's headphones are available and function properly.

## 18-2. LOADING TECHNIQUES AND SEATING CONFIGURATION

Parachutists enter the aircraft over the ramp with the static line over the right shoulder. Odd-numbered parachutists are seated on the port side, and even-numbered parachutists are seated on the starboard side (Figure 18-3).

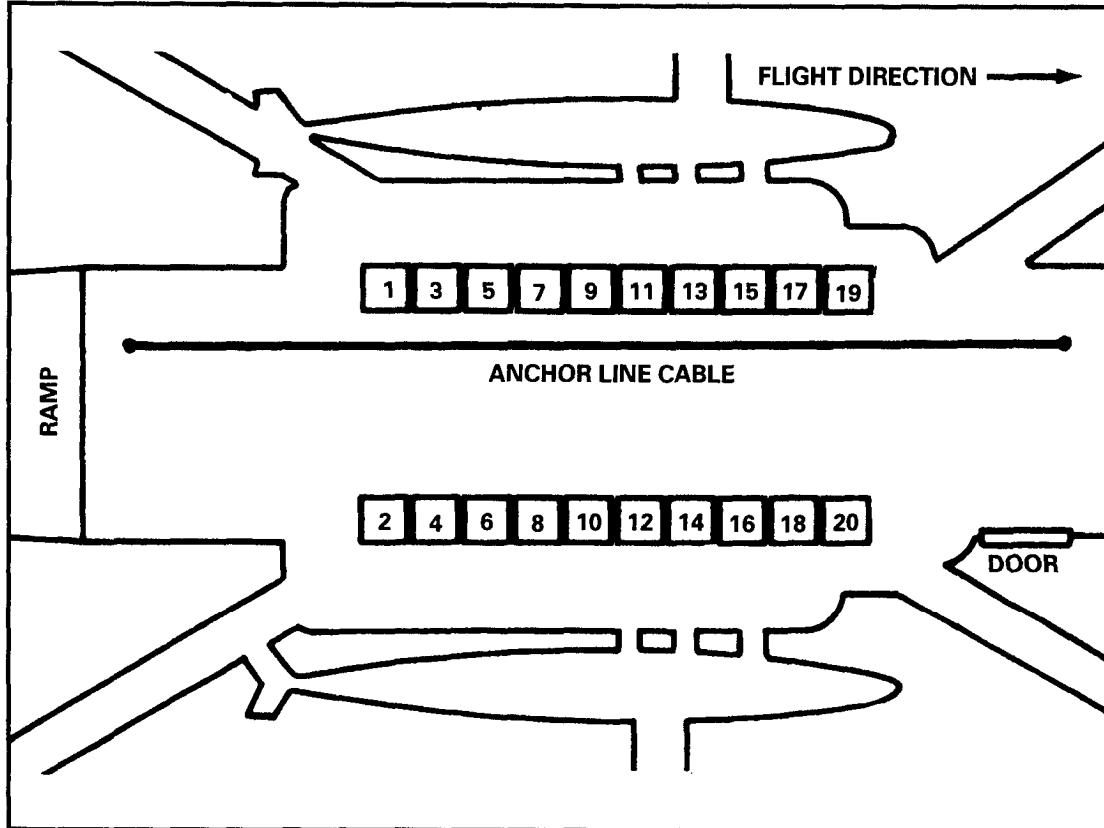


Figure 18-3. CH-53 seating configuration.

## 18-3. JUMP COMMANDS AND PROCEDURES

Jump commands and procedures for the CH-53 areas follows:

a. **Time Warnings.** The 6-minute and 1-minute warnings are given by the pilot to the crew chief, who in turn relays them orally and by hand signals to the JM.

b. **Jump Commands.**

(1) **GET READY.** All parachutists remove seat belts.

(2) **STAND UP.** All parachutists stand up and secure their seats in the up position.

(3) **PORT SIDE PERSONNEL, HOOK UP.** Odd-numbered parachutists kneel and hook up (with the open portion of the static line snap hook facing inboard) and return to the standing position (Figure 18-4, page 18-4).

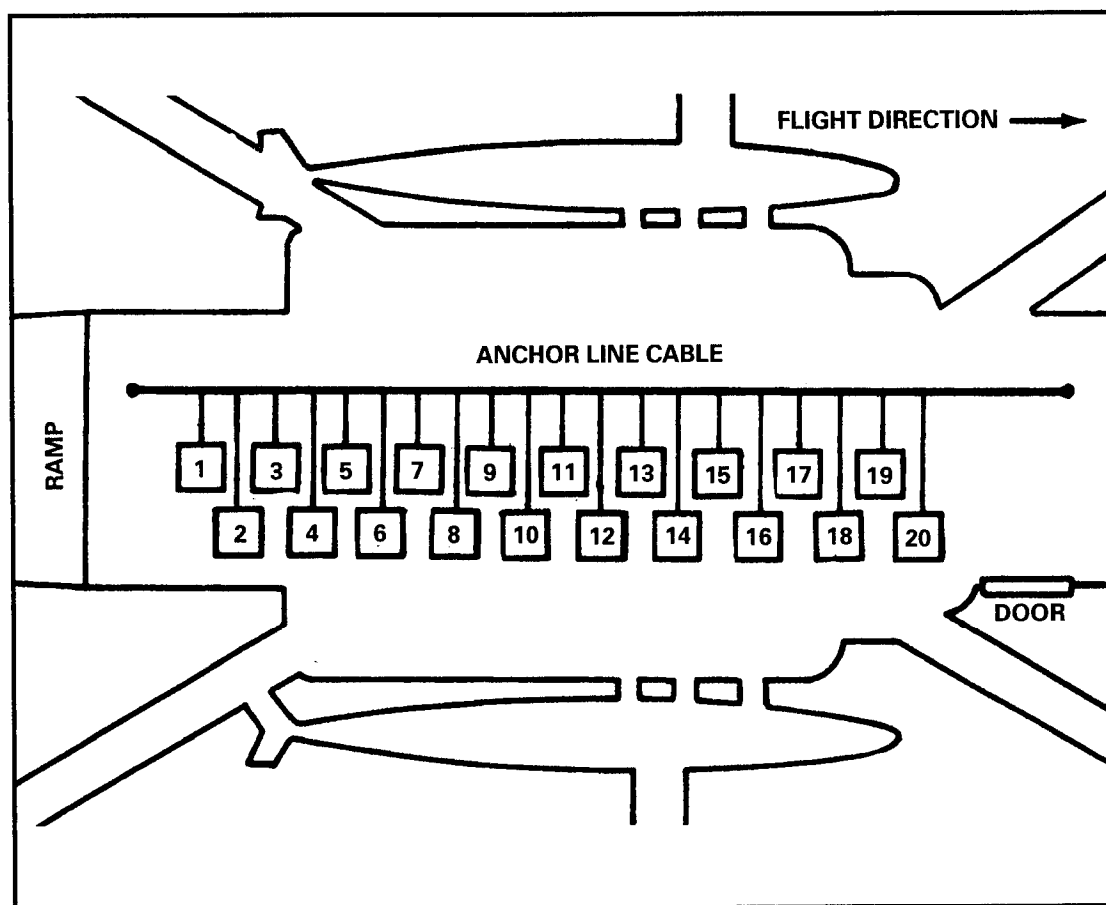


Figure 18-4. CH-53 static line routing.

(4) **STARBOARD SIDE PERSONNEL, HOOK UP.** Even-numbered parachutists kneel and hook up (with the open portion of the static line snap hook facing inboard) between odd-numbered personnel and return to the standing position to form one continuous stick of 20 parachutists. All parachutists control their static line with a reverse bight (at waist level) in the right hand.

(5) **CHECK STATIC LINES.** All parachutists check the routing of the static line of the parachutist to their front to ensure that it is not misrouted. Numbers 19 and 20 turn so that the static line of the last parachutist can be checked by number 19.

(6) **CHECK EQUIPMENT.** All parachutists check their equipment.

(7) **SOUND OFF FOR EQUIPMENT CHECK.**

(8) **STAND BY.** The number 1 jumper assumes a standing position at the ramp hinge. The remaining personnel close up intervals behind the first parachutist.

(9) **GO.** The number 1 jumper walks off the center of the ramp. The remaining parachutists follow at 1-second intervals.

c. **Recovery of Static Lines.** Upon exit of all parachutists, the crew chief or static JM recovers all static lines.

**WARNING**

PARACHUTISTS WALK OFF THE RAMP WHICH IS LOWERED A MINIMUM OF 11 DEGREES BELOW CENTERLINE GAGE. JUMPERS DO NOT MAKE A VIGOROUS EXIT. LESS THAN A 1-SECOND INTERVAL BETWEEN PARACHUTISTS MAY RESULT IN ENTANGLEMENT OF PARACHUTISTS AND STATIC LINES.

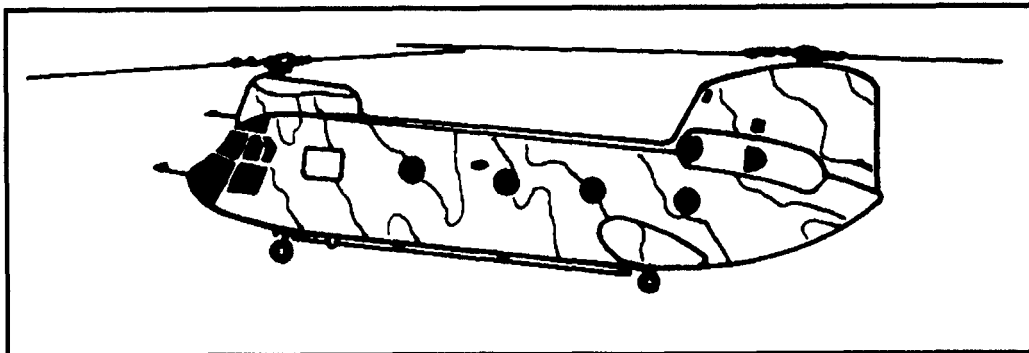
#### **18-4. SAFETY PRECAUTIONS**

No more than two parachutists should jump with CWIE in one pass over the DZ. These parachutists should be numbers 1 and 2 in the stick. The static JM or safety personnel ensure that parachutists are hooked up consecutively (1 through 20), and that all seats are secured in the up position. The speed of the aircraft during jumps is 90 to 110 knots. The minimum drop altitude for aircraft with a 90- to 110-knot drop speed is 1,250 feet AGL.

### **Section II**

#### **CH-46 SEA KNIGHT (USMC)**

The CH-46 is a tandem-rotor, medium-transport helicopter. Twelve combat-equipped parachutists can jump from either the personnel door or the ramp (Figure 18-5).



**Figure 18-5. CH-46 Sea Knight.**

## 18-5. PREPARATION AND INSPECTION

The jumpmaster prepares and inspects the CH-46 as follows:

a. **Preparation.** The following procedure prepares the CH-46 for jumping:

(1) The anchor line cable is installed on the floor of the aircraft on the starboard side using the tie-down fittings at station number 170 as the forward attachment point and station number 410 as the rear attachment point (Figure 18-6)

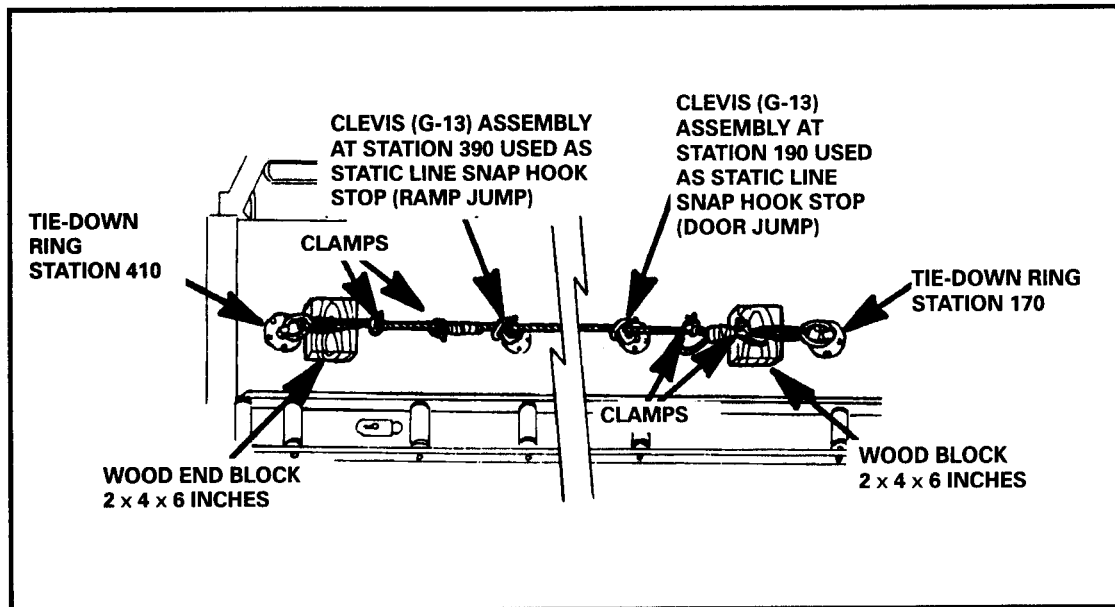


Figure 18-6. CH-46 anchor line cable installation.

(2) One 1/4-inch or 3/8-inch steel cable, 260 inches in length, is installed with four clamps, lock washers, and bolts.

(3) Two 2-by 4-by 6-inch wooden blocks are placed between the anchor line cable and floor, and a clevis assembly (G-13, for use as a static line snap hook stop) is attached to the tie-down ring at station number 190 (door jump).

(4) Excess slack is removed from the anchor line cable.

(5) The personnel door is removed, and a plywood cover is installed over the aft side of the door frame and secured with a metal plate. The bottom and aft edges of the door frame are padded and taped (Figure 18-7).

(6) When jumping from the ramp, the jumpmaster installs the anchor line cable as described previously, except that it is on the port side and the G-13 clevis (for the static line snap hook stop) is on the tie-down ring at station number 390.

(7) Parachutes must be equipped with a 5-foot static line extension (MN 1670-00-368-4225).

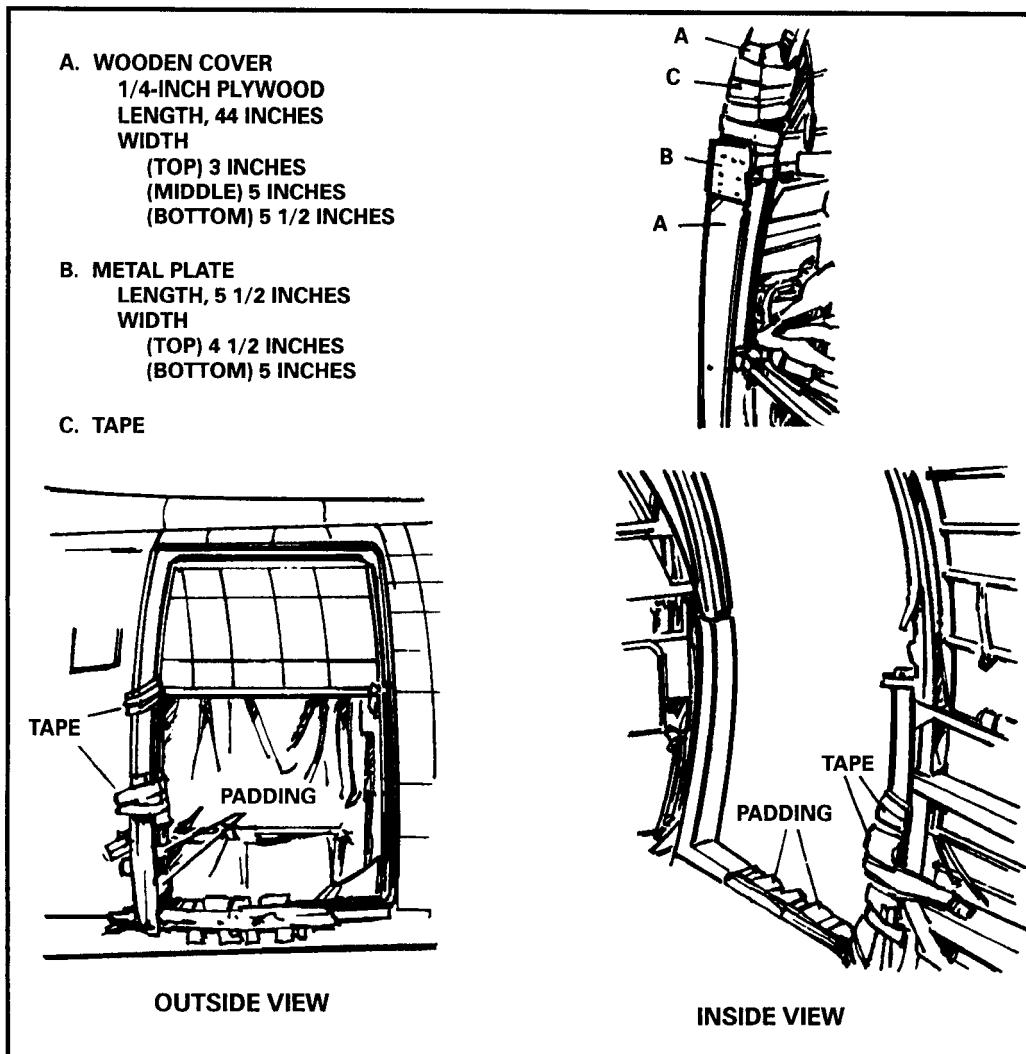


Figure 18-7. CH-46 door frame preparation.

b. **Inspection.** Before enplaning, the JM and pilot, or pilot's representative, jointly inspect the aircraft to determine the following:

- (1) Seat belts are installed for all parachutists and extended all the way out to ensure positive hookup while seated.
- (2) Seats are fastened securely in the down position.
- (3) Seats can be lifted and secured before jumping.
- (4) The anchor line cable is not worn or frayed and is secured to the attachment points in the prescribed manner.
- (5) The wooden cover is installed and secured to the aft edge of the door frame when jumping the personnel door.

- (6) The bottom edges of the door frame are properly padded and taped.
- (7) The ramp and deck are clean and free of oil or water.
- (8) All protruding objects near the ramp and personnel door are removed or taped.
- (9) The crew chief's headphones are available and function properly.

### 18-6. LOADING TECHNIQUES AND SEATING CONFIGURATION

Two ways a parachutist can jump from the aircraft areas follows:

- a. **Jumping From the Door.** Following the final briefing, the JM gives the command to enplane. The parachutists enter the aircraft with the static line over the right shoulder; they are seated on the port side.
- b. **Jumping From the Ramp.** The parachutists enter the aircraft with the static line over the right shoulder; they are seated on the starboard side.

### 18-7. JUMP COMMANDS AND PROCEDURES

The 6-minute and 1-minute warnings, whether jumping the door or ramp, are given by the pilot to the crew chief, who in turn relays them orally and by hand signals to the static JM.

- a. **Jump Commands for Door Jump.**
  - (1) **GET READY.** All parachutists in the first stick unfasten their seat belts.
  - (2) **STAND UP.** Parachutists stand up and move to the starboard side (Figure 18-8).

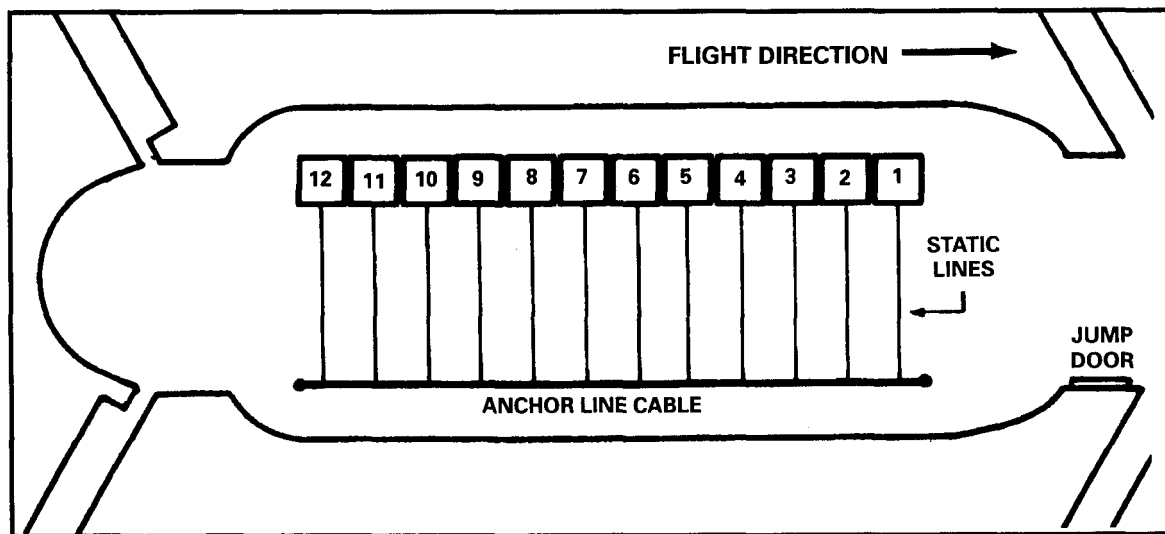


Figure 18-8. CH-46 door jump.

- (3) **HOOK UP.** Parachutists kneel and hook up with the open portion of the static line snap hook facing inboard.



(4) **CHECK STATIC LINES.** The parachutists take a reverse bight (at waist level) of about 8 inches in the static line with the right hand, keep the arm close to the side, and check the static line of the parachutist to the front.

(5) **CHECK EQUIPMENT.** All parachutists check their equipment.

(6) **SOUND OFF FOR EQUIPMENT CHECK.**

(7) **STAND IN THE DOOR.** Number 1 parachutist moves to the door and assumes the door position. He must crouch low to allow at least a 2-inch clearance between his helmet and the top of the door. The other parachutists close up behind number 1 at normal intervals.

(8) **GO.** Number 1 exits by jumping straight out the door and assuming the proper body position. The succeeding parachutists move up, make a 90-degree turn at the door, take up a correct door position, and exit in the same manner as number 1, maintaining a 1-second interval. Upon exit of all parachutists, the crew chief or static JM recovers all static lines.

**WARNING**  
PARACHUTISTS MUST NOT SPRING UPWARD WHEN JUMPING THIS HELICOPTER.

**b. Jump Commands for Ramp Jump.**

(1) **GET READY.** All parachutists in the first stick unfasten their seat belts.

(2) **STAND UP.** Parachutists stand up and move to the port side (Figure 18-9).

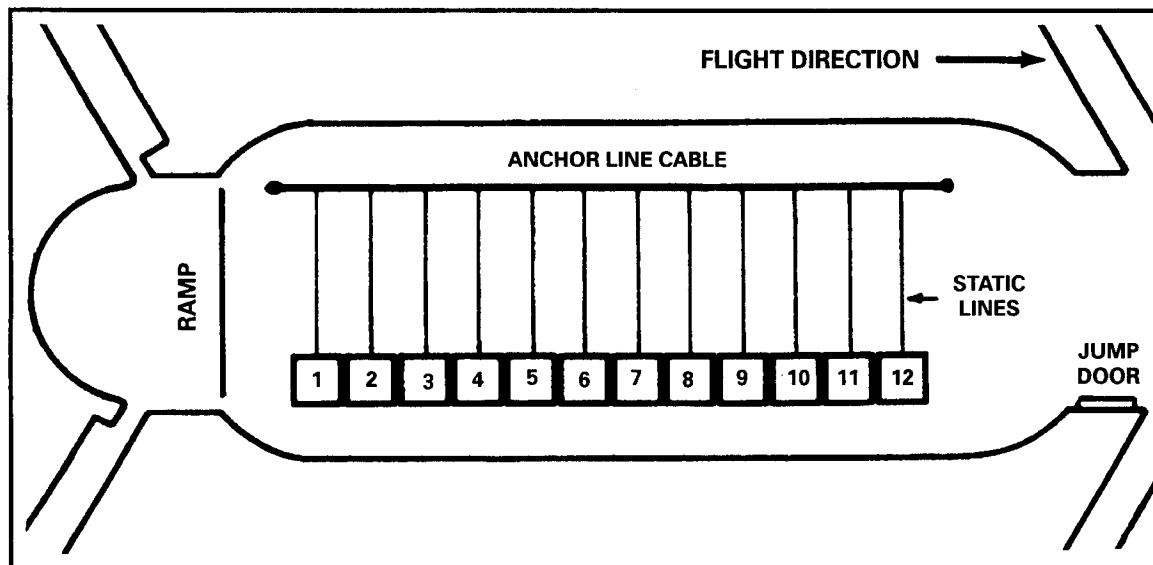


Figure 18-9. CH-46 ramp jump.

(3) **HOOK UP.** Parachutists kneel and hook up with the open portion of the static line snap hook facing inboard.

(4) **CHECK STATIC LINES.** The parachutists take a reverse bight at waist level of about 8 inches in the static line with the right hand, keep the arm close to the side, and check the static line of the parachutist to the front.

(5) **CHECK EQUIPMENT.** All parachutists check their equipment.

(6) **SOUND OFF FOR EQUIPMENT CHECK.**

(7) **STAND BY.** Number 1 assumes a standing position at the ramp hinge. The remaining parachutists close up interval.

(8) **GO.** Number 1 walks off the starboard rear of the ramp and assumes a normal body position. The remaining parachutists follow and exit in the same manner as number 1, maintaining a 1-second interval between parachutists. Upon exit of all parachutists, the crew chief or static JM recovers all static lines.

#### **WARNING**

PARACHUTISTS WALK OFF THE RAMP (WHICH IS LOWERED TO 11 DEGREES BELOW CENTERLINE GAGE) IN A CROUCHED POSITION TO AVOID HITTING THEIR HEADS ON THE UPPER RAMP DOOR. THEY DO NOT MAKE A VIGOROUS EXIT. LESS THAN A 1-SECOND INTERVAL BETWEEN PARACHUTISTS MAY RESULT IN ENTANGLEMENT OF PARACHUTISTS AND STATIC LINES. UPON EXIT OF ALL PARACHUTISTS, THE CREW CHIEF OR STATIC JM RECOVERS ALL STATIC LINES.

### **18-8. SAFETY PRECAUTIONS**

The number 1 parachutist only jumps from either the ramp or the door with a CWIE on one pass over the DZ. The static JM or safety personnel ensure that parachutists are hooked up consecutively (1 through 12). The JM ensures that seats along the starboard side are secured in the up position when jumping from the personnel door, or that seats along the port side are secured in the up position when jumping from the ramp. The speed of the aircraft is 80 knots when jumping. The minimum drop altitude is 1,500 feet AGL.

## **Section III**

### **CH/HH-3 JOLLY GREEN GIANT (USAF)**

The CH/HH-3 is a twin-engine, single-rotor, medium-transport helicopter. Fifteen combat-equipped parachutists can jump from this aircraft (Figure 18-10).

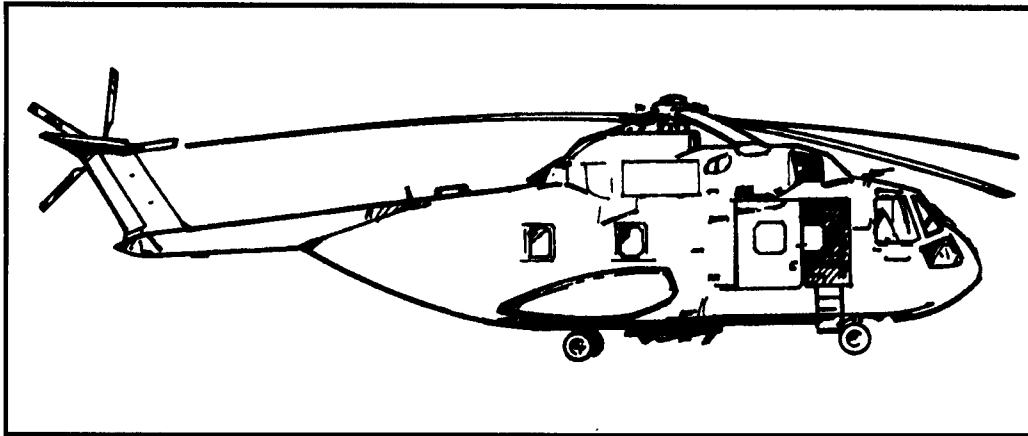


Figure 18-10. CH/HH-3 Jolly Green Giant.

### 18-9. PREPARATION AND INSPECTION

The crew chief prepares and inspects the CH/HH-3 as follows:

a. **Preparation.** The following procedure prepares the CWHH-3 for jumping:

(1) Install the oval-shaped anchor line cable on the starboard side of the aircraft's floor using the tie-down fittings at station number 193.5 (right of center) as the port side forward attachment point; station number 212.5 as the starboard side forward attachment; station number 256.5 as an intermediate starboard side attachment point; and station number 276.5 as the starboard side rear and port side rear attachment points (Figure 18-11).

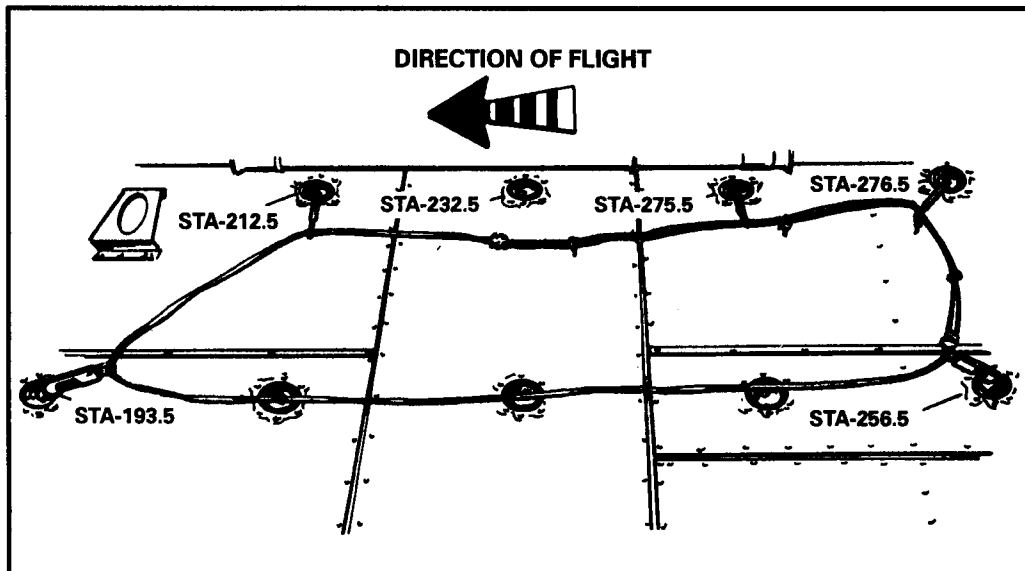


Figure 18-11. CH/HH-3 anchor line cable.

(2) The anchor line cable is constructed of ¼-inch diameter, 6,400-pound test steel cable. Thread the anchor line cable through four static line snap hooks, where the static line is normally attached. These static line snap hooks connect the anchor line cable to the tie-down fittings. Complete the oval by overlapping both ends of the steel cable, then by securing the overlap with four cable clamps spaced intermittently between the swaged cable ends.

(3) Manufactured cables have the date of initial manufacture and weight testing capacity (2,500 pounds) permanently marked on the starboard side forward static line snap hook. Inspect cables each time the anchor line cable is installed for jumping. Remove from service cables showing excessive wear, corrosion, or more than three broken strands per inch. Weight test cables to a 2,500-pound capacity within each 12-month calendar period. (For example, cables weight tested on 1 January will be due weight testing by 31 January the following year.) Document annual weight testing on a DD Form 1574, which is attached to the cable.

b. **Inspection.** Before enplaning, the JM and pilot, or pilot's representative, jointly inspect the aircraft to determine the following:

(1) The main cabin door is secured to the rear and taped to include the door handle and latch.

(2) Any external cargo slings are removed before conducting jump operations.

(3) All protruding objects near the doors are removed or taped. The penetrator is removed before conducting jump operations.

(4) Safety belts are installed for all parachutists and are extended completely to ensure positive hookup while seated.

(5) Seats are fastened securely in the down position with backs loose (except the four seats raised for anchor line cable installation).

(6) The anchor line cable is tight and free of frays.

(7) The deck is clean and free of oil and water.

(8) The flight engineer's headphones and the JM intercomm cord are available and function properly.

## **18-10. LOADING TECHNIQUES AND SEATING CONFIGURATION**

Parachutists enter the aircraft through the starboard side cabin door with their static line over their right shoulder. They enter the aircraft in reverse stick order with numbers 1 through 8 seated on the port side and numbers 9 through 15 seated on the starboard side.

## **18-11. JUMP COMMANDS AND PROCEDURES**

Jump commands and procedures on the CH/HH-3 are as follows:

a. **Time Warnings.** The 6-minute and 1-minute warnings are given by the pilot to the flight engineer, who in turn relays them orally and by hand signals to

the JM. Due to the limited space available to hook up, only four parachutists are airdropped each pass.

b. **Jump Commands.** The commands on the CH/HH-3 are—

- (1) **GET READY.** The first four parachutists remove seat belts.
- (2) **STAND UP.** Parachutists stand up and move to the anchor line cable.
- (3) **HOOK UP.** Parachutists connect their static line snap hook to the anchor line cable with the opening toward the skin of the aircraft.
- (4) **CHECK STATIC LINES.** All parachutists take a reverse bight in the static line, ensuring the static line remains over their bent elbow.
- (5) **CHECK EQUIPMENT.** All parachutists check their equipment. Parachutists jumping equipment must beat the front of their stick.
- (6) **SOUND OFF FOR EQUIPMENT CHECK.**
- (7) **STAND IN THE DOOR.** The first parachutist moves to the main cabin door, stopping about one foot from the door, and awaits the JM's commands.
- (8) **STAND BY.** The first parachutist moves to the main cabin door and awaits the JM's commands.
- (9) **GO.** Number 1 walks off the starboard rear corner of the ramp. The remaining parachutists follow at 1-second intervals.

NOTE: Commands are repeated for the next group of four parachutists and are repeated until the aircraft is empty.

#### **WARNING**

PARACHUTISTS WALK OUT THE DOOR 90 DEGREES TO THE AIRCRAFT IN A CROUCHED POSITION TO AVOID HITTING THEIR HEADS ON THE UPPER DOOR FRAME. THEY DO NOT MAKE A VIGOROUS EXIT.

c. **Exits.** Parachutists step out the same as exiting the tailgate of a fixed-wing aircraft, maintaining about a 1-second interval between parachutists. Less than a 1-second interval may result in entanglement of parachutists and static lines. Upon exit of all parachutists of each pass, the JM or flight engineer recovers all deployment bags and static lines.

## **18-12. SAFETY PRECAUTIONS**

Approaching or loading the aircraft is performed only after visual clearance by the pilot or flight engineer. Before clearing any parachutists to jump, the JM confirms that the main gear is in the up position. The speed of the aircraft during all jump operations is between 70 knots and 90 knots indicated air speed.